REMARKS

Interview request

To ensure this amendment addresses the Office's concerns, Applicants respectfully request a telephonic interview to discuss these issues. Applicants thank the Examiner for acknowledging their request for a telephonic interview (see page 6, of the OA), and Applicants' representative will follow up with the Examiner soon after submission of this response and amendment.

In compliance with Rule 133 (37 C.F.R. §1.133), a PTO 413A Applicant Initiated Interview Request Form is attached herein.

Status of the Claims

*Pending claims*

Claims 1 to 30, 33 to 45, 47 to 50, 52, 53, 55 to 64, 66 to 71, 83 to 90, 93, 94 and 97 to 99 are pending and under consideration.

*Claims added*

Claims 101 and 102 are added; thus, after entry of this amendment, claims 1 to 30, 33 to 45, 47 to 50, 52, 53, 55 to 64, 66 to 71, 83 to 90, 93, 94 and 97 to 102 will be pending and under consideration.

*Outstanding Rejections*

The rejection of claims 1 to 30, 33 to 45, 47 to 50, 52, 53, 55 to 64, 66 to 71, 83 to 90, 93, 94 and 97 to 99 under 35 U.S.C. §112, first paragraph, written description requirement, is maintained. Applicants respectfully traverse all outstanding objections to the specification and rejection of the claims.

Support for the Claim Amendments

The specification sets forth an extensive description of the invention in the amended claims. Support for claims directed to methods comprising contacting $CD4^+$ or $CD8^+$ primary **T** cells or T cell stem cells with CD3 polypeptide or CD28 polypeptide binding molecules; or, contacting FLT-3 receptor polypeptide, thrombopoietin (TPO) receptor polypeptide or Kit polypeptide receptor-positive primary **T** cells or T cell stem cells with molecules that specifically bind to them, can be

found inter alia, in paragraphs [0019], [0034], [0059], [0116] to [0119], and [0125], of U.S. patent application publication no. 20040062756 ("the '756 publication", the publication of this application). Support for methods comprising contacting cells with at least one cell stimulatory polypeptide, wherein the binding of that stimulatory polypeptide to the cell surface results in stimulation of the cell, can be found *inter alia* in paragraphs [0062] and [0063] of the '756 publication. Support for methods comprising the stable transduction of a primary lymphoid cell, a myeloid cell or a hematopoietic progenitor cell, can be found inter alia in paragraphs [0025] and [0026] of the '756 publication. Support for methods comprising use of lentiviral vectors having at least one cis-acting nucleotide sequence derived *inter alia* from a nef gene, can be found *inter alia* in paragraph [0066] of the '756 publication.

Accordingly, no new matter has been added and the amendment can be properly entered.

Rejection Under 35 U.S.C. § 112, First Paragraph, Written Description

The rejection of claims 1 to 30, 33 to 45, 47 to 50, 52, 53, 55 to 64, 66 to 71, 83 to 90, 93, 94 and 97 to 99 under 35 U.S.C. §112, first paragraph, written description requirement, is maintained for reasons set forth in detail on pages 1 to 5, of the OA.

The Office remains concerned, inter alia, that the specification fails to describe a representative number of species of the genera of: T cell surface receptors, as embodied in claim 1 (see, e.g., lines 15 to 16, page 2, and lines 7 to 26, page 5, of the OA); polypeptides that physically interact with a receptor on the surface of the primary **T** cell or **T** stem cell, as embodied in claim 34 (see, e.g., lines 17 to 19, page 2, of the OA); cell surface binding polypeptides, as embodied in claim 71 (see, e.g., lines 19 to 21, page 2, and lines 21 to 26, page 5, of the OA).

Applicants respectfully traverse, and incorporate their comments from their earlier responses, including those of July 24, 2006, and February 20, 2007, all expressly incorporated herein.

However, only to expedite prosecution and facilitate allowance of this application and to address the Office's concerns, the claims have been amended and further narrowed in scope with response to: the genus of cell binding molecules used; the genus of cell surface polypeptides contacted by the cell binding molecules; and the types of cells that are transduced by the claimed methods.

For example, regarding the types of cells that are transduced by the claimed methods: after entry of the instant amendment the claimed methods will be directed to, inter alia, stable transduction of only primary lymphoid cell, a myeloid cell or a hematopoietic progenitor cell (also, please see comments regarding new claims 100 and 101, below).

Regarding the genus of cell binding molecules used, after entry of the instant amendment the claimed methods will only use at least one cell stimulatory polypeptide that binds to a cell surface protein or to a cell surface receptor, wherein the binding of the at least one cell stimulatory polypeptide to the cell surface results in stimulation of the cell (also, please see comments regarding new claims 100 and 101, below).

Regarding the genus of cell surface polypeptides contacted by the cell binding molecules, after entry of the instant amendment the claimed methods the cell stimulatory polypeptides will target only cell surface proteins or to cell surface receptors whose contact with the stimulatory polypeptide results in stimulation of the cell (also, please see comments regarding new claims 100 and 101, below).

In new claims 100 and 101, the scope of the cells to be transduced is narrowed to $CD4^+$ or $CD34^+$ primary **T** cells and/or $CD4^+$ or $CD34^+$ T cell stem cells, wherein the method comprises contacting the surface of the primary **T** cell or T cell stem cells at the same time *in vitro* or *ex vivo* with both a lentiviral vector and at least one polypeptide which binds the cell surface by binding to at least one **T** cell surface receptor, wherein at least about 75% of the **T** cells are stably transduced after about seven to ten days, or at about 14 days, and if the primary **T** cell or T cell stem cell is $CD4^+$ or $CD8^+$, the at least one **T** cell surface receptor is a CD3 polypeptide, a CD28 polypeptide or a combination thereof; or, if the primary **T** cell or T cell stem cell is $CD34^+$, the at least one **T** cell surface receptor is a FLT-3 receptor polypeptide, a thrombopoietin (TPO) receptor polypeptide or a Kit polypeptide receptor.

## CONCLUSION

Applicants respectfully submit that after entry of the instant amendment all claims pending in this application are in condition for allowance. Applicants respectfully request withdrawal of the rejection under section 112, first paragraph. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

In the unlikely event that the transmittal form is separated from this document and the Patent Office determines that an extension and/or other relief is required, applicants petition for any required relief including extensions of time and authorize the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing **397272000401**. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Applicants thank the Examiner for acknowledging their request for a telephonic interview; and Applicants' representative will follow up with the Examiner soon after submission of this response and amendment.

Dated: October 30, 2007

Respectfully submitted,

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